Arijit Ghosh

Graduate student

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Curriculum Vitae

Education

2022 **Graduate student**, *Chronobiology and Behavioural Neurogenetics Lab, Neuroscience Unit, Jawaharlal Nehru Centre for Advanced Scientific Research*, Bangalore, Karnataka, India.

2016 **Integrated M.Sc.**, *Homi Bhaba National Institute, program conducted at National Institute of Science Education and Research*, Bhubaneswar, Orissa, India.
Life Sciences, CGPA 8.43 out of 10

2011 **Higher Secondary Examination**, *Ramakrishna Mission Vidyalaya*, Narendrapur, Kolkata, India.
With Science Major (Biology, Chemistry, Physiscs, Mathematics), West Bengal Board of Higher Secondary Examination, 86.6 Percent marks.

Scientific contribution (peer-reviewed)

***(asterisk) : First OR joint first author**

From PhD

- ***Arijit Ghosh**, Vasu Sheeba. **"VANESSA – Shiny apps for accelerated time-series analysis and visualization of Drosophila circadian rhythm and sleep data"**. *Journal of Biological Rhythms*, (2022), Accepted for publication.
- ***Arijit Ghosh**, Pragya Sharma, Shephali Dansana, Vasu Sheeba. **"Evidence for co-evolution of masking and circadian phase in *Drosophila melanogaster*"**. *Journal of Biological Rhythms* 36, no. 3 (2021): 254-270.
- Lakshman Abhilash, **Arijit Ghosh**, and Vasu Sheeba. **"Selection for timing of eclosion results in co-evolution of temperature responsiveness in *Drosophila melanogaster*"**. *Journal of Biological Rhythms* 34, no. 6 (2019): 596-609.

From master's dissertation, collaborations and others

- Tushar Kanta Acharya, Satish Kumar, Nikhil Tiwari, ***Arijit Ghosh**, Ankit Tiwari, Subhashis Pal, Rakesh Kumar Majhi, Ashutosh Kumar, Rashmita Das, Abhishek Singh, Pradip K. Majhi, Naibedya Chattopadhyay, Luna Goswami, Chandan Goswami. **"TRPM8 channel inhibitor-encapsulated hydrogel as a tunable surface for bone tissue engineering"**. *Scientific Reports* 11, 3730 (2021).
- Nabanita Roy Chattopadhyay, Koustav Chatterjee, Nikhil Tiwari, Sudipta Chakrabarti, Sushil Kumar Sahu, Sankar Deb Roy, **Arijit Ghosh**, R Rajendra Reddy, Piyanki Das, Sudipa Mal, Basab Bijay Karnar, Ashok Kumar Das, Sam Tsering, Komri Riba, Zoreng puii, Eric Zomawia, Y Indibar Singh, Amol Ratnakar Suryawanshi, Abhishek Kumar, Dipyaman Ganguly, Chandan Goswami, Tathagata Choudhuri. **"TLR9 polymorphisms might contribute to the ethnicity bias for EBV-infected Nasopharyngeal Carcinoma"**. *iScience* 23, no. 3 (2020): 100937.
- Somdatta Saha, Samikshya Sucharita, Rakesh Kumar Majhi, Ankit Tiwari, **Arijit Ghosh**, Sunil Kumar Pradhan, Bijay Kumar Patra et al. **"TRPA1 is selected as a semi-conserved channel during vertebrate evolution due to its involvement in spermatogenesis"**. *Biochemical and biophysical research communications* 512, no. 2 (2019): 295-302.

- Sridhar Sanyasi, Satish Kumar, **Arijit Ghosh**, Rakesh Kumar Majhi, Navneet Kaur, Priyanka Choudhury, Udai P. Singh, Chandan Goswami, and Luna Goswami. **"A modified polysaccharide-based hydrogel for enhanced osteogenic maturation and mineralization independent of differentiation factors"**. *Macromolecular bioscience* 17, no. 3 (2017): 1600268.
- Somdatta Saha, ***Arijit Ghosh**, Nikhil Tiwari, Ashutosh Kumar, Abhishek Kumar, and Chandan Goswami. **"Preferential selection of Arginine at the lipid-water-interface of TRPV1 during vertebrate evolution correlates with its snorkeling behaviour and cholesterol interaction"**. *Scientific reports* 7, no. 1 (2017): 1-21.
- ***Arijit Ghosh**, Navneet Kaur, Abhishek Kumar, and Chandan Goswami. **"Why individual thermo sensation and pain perception varies? Clue of disruptive mutations in TRPVs from 2504 human genome data"**. *Channels* 10, no. 5 (2016): 339-345.
- Rakesh Kumar Majhi, Somdatta Saha, Ashutosh Kumar, **Arijit Ghosh**, Nirlipta Swain, Luna Goswami, Pratyush Mohapatra et al. **"Expression of temperature-sensitive ion channel TRPM8 in sperm cells correlates with vertebrate evolution"**. *PeerJ* 3 (2015): e1310.

Manuscripts under preparation

***(asterisk) : First OR joint first author**

- ***Arijit Ghosh**, Abhilash Lakshman, Vasu Sheeba Vijay Kumar Sharma, KL Nikhil. **"Genetic architecture of divergent chronotypes of *Drosophila* eclosion rhythm - a next-generation genome sequencing study"**.
- ***Arijit Ghosh**, Vasu Sheeba. **"A large-scale screening of the DrosDel collection reveals plausible loci involved in phasing of *Drosophila* eclosion rhythm"**.

PhD research (2016-)

Title Genetic and behavioural characterization of early and late phase of emergence in populations of fruitflies *Drosophila melanogaster*

Supervisor Professor Sheeba Vasu, Chronobiology and Behavioural Neurogenetics Lab, Neuroscience Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, Karnataka, India

Master's dissertation research (2013-2016)

Title Exploring role of thermosensitive TRP channels in osteogenesis

Supervisor Professor Chandan Goswami, National Institute of Science Education and Research, Bhubaneswar, Orissa, India

Achievements and Awards

- Awarded the SRBR Merit Award by the Society for Research on Biological Rhythms Awards Committee (2020)
- Awarded the Global Diversity Fellowship by the Society for Research on Biological Rhythms Awards Committee (2020)
- Awarded Bhagwati Devi Memorial Award for best oral presentation at the International Symposium on Biological Rhythms (2019) organized by the Indian Society for Chronobiology
- Awarded CSIR Junior Research Fellowship (2016-2018) and CSIR Senior Research Fellowship (2018-Now) for graduate studies
- Awarded Best poster teaser award at in-house symposium at JNCASR 2017
- Awarded Best Student award at DST-SERB School in Insect Biology 2016
- Qualified in Graduate Aptitude Test in Engineering (GATE) 2016
- Ranked 26th and 32nd in LS category and 59th in JRF category in National Eligibility Test (NET), organized by Council of Scientific and Industrial Research, India (CSIR NET 2015-2016)
- Awarded 2nd prize in 1st International Conference on Translational Research for the poster titled *"Exploring the role of TRP channels in bone cells"*

- Received the prestigious DST-INSPIRE scholarship for my master's studies from Department of Science and Technology, Government of India

Conferences and Workshops attended

- Attended 2020 International Chronobiology Summer School as a Teaching Assistant
- Attended and presented a poster at SRBR 2020, virtually organized by The Society for Research on Biological Rhythms, won Global Diversity fellowship and SRBR Merit Award in the same
- Invited for an oral presentation at International Symposium on Biological Rhythms 2019, organized by the Indian Society for Chronobiology at CCSU, Meerut, India
- Attended and helped in organizing InSearch - Insects in Research symposium, 2018, 2019 and 2020, organized by the Clock Club, JNCASR, Bangalore, India
- Attended the International Symposium on Biological Timing and Health Issues in the 21st Century, 2017 at University of Delhi, Delhi
- Attended the Workshop on NGS data analysis and curation, 2017 at JNCASR, Bangalore
- Attended DST-SERB school in Insect Biology at Punjabi University, 2016 at Patiala, India
- Attended and helped in organizing 3rd Biennial Meeting of Probiotic Association of India, March 2016 organized by NISER, Bhubaneswar, India
- Attended and presented poster at 1st International Conference on Translational Research: From Basic Science to Clinical Application, February 2015 organized by KIIT, Bhubaneswar, India
- Attended 2nd meeting of Indian Sub-continental Branch of the International Neuropeptide Society, December 2015 organized by NISER, Bhubaneswar, India
- Attended 35th All India Cell Biology Conference (AICBC), December 2011 organized by NISER, Bubaneswar, India
- Attended the coveted science camp VIJYOSHI (Vigayn Jyoti Shibir) organized by Indian Institue of Science, Bangalore, India in November 2011

Teaching and mentorship

Chronobiology

- Taught part of the basic chronobiology course at the Neuroscience Unit, JNCASR (3 weeks - 2018, 2019, 2021)
- Taught chronobiology practical course - timeseries analysis (3 weeks - 2018, 2019)
- Teaching assistant at the 2020 International Chronobiology Summer School (May-July 2020)

Basic and hands-on Statistics

- Taught the basic statistics part of Neurobiology practical courses at the Neuroscience Unit, JNCASR (2 weeks - 2018, 2019)

Trainee mentorship

- Mentored 2 summer trainees each in the summers of 2017, 2018, 2019 at JNCASR, 1 summer trainee in the summer of 2015 at NISER, and one short term trainee in 2015 at NISER
- Mentored 1 year master's dissertation research thesis of trainee (2019-2020) at JNCASR

Skills

Wet Lab

- *Immunostaining*: Cells, tissue; Immunoblotting, Fixed cell fluorescence imaging, live cell calcium imaging, live cell pH measurement, live cell mitochondrial potential dynamics, confocal microscopy
- *Cell line culture and assays*: Various bone cell line, macrophage cell line and neuronal cell line; Primary cell culture: Mesenchymal stem cell isolation and culture, Hematopoeitic stem cell isolation and culture, calvarial osteoblast culture, Peritoneal macrophage isolation and culture, MTT assay, ALP assay, Mineralization assay of osteoblasts, PCR, RT-PCR

- *Fly work*: Maintenance, embryo isolation, staining and imaging, population maintenance, genetic crosses
- *Animal handling*: Rat, mice, and rabbit, dosing, bone marrow isolation, peritoneal macrophage isolation, calvaria isolation
- *Behavorial assays*: Locomotor activity assay, eclosion assay, oviposition assay, development time assay

Dry Lab

- *Advanced R* : Data wrangling, Visualization, NGS analysis, Time series analysis, Shiny app development
- *awk* : Data wrangling, NGS analysis
- *LINUX/UNIX* : Moderate usage, command line proficiency, High Performance Cluster (HPC) usage, job scheduling, bash scripting, working knowledge of PERL and Python
- *Sequence analysis, Homology modelling, Molecular phylogenetic analysis* : Proficient in analysis using MEGA, MODELLER, YASARA, PHYLIP
- *Molecular dynamics, docking* : Proficient in YASARA, VINA
- *Population genomics analysis* : Proficient in using FastQC, Trimmomatic, Popoolation, Popoolation2, SAMtools, Bowtie2, GO, VCFtools, and developing pipelines
- *Statistics* : Proficient in Statistica, R
- *Visualization* : Proficient in CIRCOS, advanced R, GraphPad Prism, Origin Pro, Sigmaplot
- *General computer skills* : Proficient in Microsoft Office, Adobe Illustrator, Adobe Photoshop, Adobe Lightroom, HTML
- *Code repository* : `https://github.com/orijitghosh`

Languages

Bengali	**Native**	
Hindi	**Native**	
English	**Fluent**	*Daily practice, all work performed in English, medium of education English*

Interests

Hobbies	Photography (Portrait, Landscape, Abstract)
Designing	Photoshop, Illustrator, HTML, Website designing, Graphic designing, App development